

REMARKS

This application has been reviewed carefully in view of the final Office Action mailed December 26, 2002. In that Office Action, claims 1-8 were rejected under 35 U.S.C. § 102(b), and under 35 U.S.C. § 103(a), as allegedly anticipated by and unpatentable over Yau (U.S. Pat. No. 5,080,942). Claim 11 was rejected under 35 U.S.C. § 103(a), as allegedly unpatentable over Yau, and further in view of Patel (U.S. Pat. No. 4,654,402).

These rejections are addressed as follows:

35 U.S.C. § 102(b) and § 103(a) REJECTIONS

Applicant appreciates the Examiner's further comments provided in the Office Action, as they provide useful guidance in Applicant's response. In particular, the Examiner asserted Applicant's argument that the present invention is novel and not obvious over Yau to be unconvincing because no supportive data had been presented to show that the carbon black of Yau affects the basic and novel characteristics of the invention of claims 1-8.

Claims 1-8

In the accompanying Information Disclosure Statement is an article entitled Destruction (Deterioration) of Packing Made of EPDM by Tap Water, by Y. Ohtake et. al., ("the Article") which was published in pp. 94-97 of Kogyo Zairyo, Vol. 45, No. 7 in 1997 (July of 1997). "Kogyo Zairyo" is Japanese for "Industrial Materials." The Article, which has been translated from Japanese, contains evidence showing that the carbon black of Yau affects the basic and novel characteristics of the invention of independent claim 1 and dependent claims 2-8.

On page 97 (page 5 in the attached translation), the Article recites experimental results. In particular, an EPDM packing was supplemented with carbon black (CB), and an EPDM packing (or seal) was supplemented with white carbon (mainly silicic anhydride). Tap water was passed through these EPDM packing under the identical conditions for 10 months. As shown in Picture 1 on page 97 of the original Article, the EPDM packing in the CB-supplemented system (left-upper picture) was seriously damaged resulting in a tattered surface thereon, while a surface of the EPDM packing in the white-carbon-supplemented system (right-lower picture) was slightly cracked. Therefore, it is clear that the durability of the EPDM packing in the white-carbon-supplemented system is significantly higher than that of the EPDM packing in the CB-supplemented system.

The Article also provides discussion about the mechanism, as shown on page 4 of the English translation. The tap water contains some amount of chloride ion as shown in Table 3, and active points on carbon black surface in the rubber absorb ambient active chlorinated compounds. The rubber is degraded by hypochlorous acid (HClO) or hypochlorous ion (ClO-) from the active chlorinated compounds.

Applicant notes that the EPDM packing in the white-carbon-supplemented system does not include polybutene, which is one of the elements in claim 1. Further, since Yau relates to an elastomeric article used for the splicing and termination of high voltage power cables (column 1, lines 4-11), Applicant notes that the present invention is novel and not obvious over the Yau patent in light of the Article.

The Article provides supportive data showing that the carbon black of Yau affects the basic and novel characteristics of the invention of claims 1-8. The Yau patent fails to disclose a rubber composition consisting essentially of a rubber component, polybutene

and white carbon, and thus fails to anticipate or make obvious the invention of independent claim 1 and dependent claims 2-8. Therefore, Applicant respectfully requests the Examiner cancel the rejections of claims 1-8 under §§ 102(b) and 103(a).

5 Claim 11

Claim 11 depends from claim 1, which is novel and not obvious, as discussed above. Additionally, Applicant notes that Patel uses gamma-glycidoxypolytrimethoxysilane for polypropylene (PP) and acrylic ester copolymer rubber containing carboxy groups (AAR). However, Patel fails to teach or suggest to use gamma-glycidoxypolytrimethoxysilane for ethylene propylene diene monomer rubber, which is used in the Yau patent. Moreover, column ~~6~~¹⁶ in Table 7 of the Patel patent includes 4 parts of MA-PP-1 while column 5 in Table does not, and the results in column 6 demonstrate better tensile properties than those in column 5. It is suggested that effects of using gamma-glycidoxypolytrimethoxysilane may depend on the composition to which it is added.

Patel fails to teach or suggest to use gamma-glycidoxypolytrimethoxysilane for ethylene propylene diene monomer rubber, and thus fails to make obvious the invention of claim 11. For the above-recited reasons, Applicant respectfully requests the Examiner cancel the rejection of claim 11 under § 103(a).

CONCLUSION

In view of the foregoing amendments and remarks, Applicant requests favorable consideration and allowance of all claims in the application.

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Respectfully submitted,

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